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Practitioner's Docket No. TRW(AP)5727 **PATENT**

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of:	David A. Grilli et al.		
Application No.:	09/933,534	Group No.:	3682
Filed:	August 20, 2001	Examiner:	B. J. Van Pelt
For:	**THERMOPLASTIC POLYOLEFIN ELASTOMER STEERING WHEEL**		

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TRANSMITTAL OF APPEAL BRIEF
(PATENT APPLICATION—37C.F.R. 1.192)

1. Transmitted herewith, in triplicate, is the APPEAL BRIEF in this application, with respect to the Notice of Appeal filed on August 4, 2005

NOTE: "Appellant must, within two months from the date of the notice of appeal under § 1.191 or within the time allowed for reply to the action from which the appeal was taken, if such time is later, file a brief in triplicate. . ." 37 C.F.R. § 1.192(a) (emphasis added).

2. STATUS OF APPLICANT
This application is on behalf of
- ☒ other than a small entity.
- ☐ a small entity.

A statement
- ☐ is attached.
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NOTE: *37 C.F.R. § 1.740(b) "...an applicant shall be deemed to have failed to engage in reasonable efforts to conclude processing or examination of an application for the cumulative total of any periods of time in excess of three months that are taken to reply to any notice or action by the Office making any rejection, objection, argument, or other request, measuring such three-month period from the date the notice or action was mailed or given to the applicant, in which case the period of adjustment set forth in § 1.703 shall be reduced by the number of days, if any, beginning on the date after the date that is three months after the date of mailing or transmission of the Office communication notifying the applicant of the rejection, objection, argument, or other request and ending on the date the reply was filed. The period, or shortened statutory period, for reply that is set in the Office action or notice has not effect on the three-month period set forth in this paragraph."*

NOTE: *The time periods set forth in 37 C.F.R. § 1.192(a) are subject to the provision of § 1.136 for patent applications. 37 C.F.R. § 1.191(d). See also Notice of November 5, 1985 (1060 O.G. 27).*

NOTE: *As the two-month period set in § 1.192(a) for filing an appeal brief is not subject to the six-month maximum period specified in 35 U.S.C. § 133, the period for filing an appeal brief may be extended up to seven months. 62 Fed. Reg. 53,131 at 53,156; 1203 O.G. 63 at 84 (Oct. 10, 1997).*

The proceedings herein are for a patent application and the provisions of 37 C.F.R. 1.136 apply.
(complete (a) or (b), as applicable)

(a) ☒ Applicant petitions for an extension of time under 37 C.F.R. 1.136 (fees: 37 C.F.R. 1.17(a)(1)-(5)) for the total number of months check below:

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SIGNATURE OF PRACTITIONER

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(type or print name of practitioner)

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THE UNITED STATES PATENT AND TRADEMARK OFFICE

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APPEAL BRIEF

Sir:

Pursuant to the Notice of Appeal filed in this case on August 4, 2005, Appellants' present herewith their Brief on appeal.

I. REAL PARTY IN INTEREST

The real party in interest is TRW Vehicle Safety Systems Inc., as indicated by the Assignment recorded August 20, 2001, Reel/Frame: 012100/0676.

II. RELATED APPEAL AND INTERFERENCES

There are no related appeals or interferences.

III. STATUS OF CLAIMS

Claims 1, 3, 5-12 and 14-28 are rejected and are appealed.

Claims 2, 4 and 13 are cancelled.

Claims 29-37 are allowed.

IV. STATUS OF AMENDMENTS

Claim 4 was cancelled in a proposed amendment after final dated June 9, 2005.

The proposed amendment was entered for purposes of appeal in an Office Action dated July 27, 2005.

V. SUMMARY OF THE CLAIMED SUBJECT MATTER

The present invention relates to a steering wheel (10) comprising a rim portion (12), a spoke portion (18), and a foamed thermoplastic polyolefin elastomer padding material (14) adhered to the rim portion (12) and the spoke portion (18). (Page 5, lines 16-19; Page 6, lines 7-9). The foamed thermoplastic polyolefin elastomer padding material (18) includes an inner portion (89) and an outer portion (90) substantially covering the rim portion (12) and the spoke portion (18). (Page 24, lines 6-9; Fig. 4). The inner portion (89) has a cellular structure and a substantially uniform cell density. (Page 24, lines 9-11). The outer portion (90) has a continuous external surface free of interruption by a cell. (Page 24, lines 11-12). The foamed thermoplastic polyolefin elastomer padding material comprises a gasified chemical foaming agent and a thermoplastic polyolefin elastomer. (Page 6, lines 12-14). The thermoplastic polyolefin elastomer is weatherable and has a durometer shore A hardness of about 30 to about 90. (Page 6, lines 14-17).

The foamed thermoplastic polyolefin elastomer padding material substantially covering the rim portion can have a first thickness, and the foamed thermoplastic polyolefin

elastomer padding material substantially covering the spoke portion can have a second thickness different from the first thickness. (Page 24, lines 16-24).

The thermoplastic polyolefin elastomer includes a thermoplastic polyolefin polymer selected from the group consisting of polyethylene, polypropylene, polybutylene, polyisobutylene, polyoctene, copolymers of polyethylene, polypropylene, and polybutylene, and mixtures thereof. (Page 7, lines 4-9). The thermoplastic polyolefin elastomer can also include thermoplastic elastomer or rubber. (Page 7, lines 20-23). In an aspect of the invention, the thermoplastic polyolefin elastomer comprises a mixture of ethylene-propylene copolymer, ethylene-propylene-diene terpolymer, and polypropylene. (Page 8, lines 10-14).

The foamed padding material can also be plasticizer-free. (Page 15, lines 12-13). The chemical foaming agent can comprise an exothermic chemical foaming agent, an endothermic chemical foaming agent, or a mixture thereof. (Page 9, lines 12-14). The chemical foaming agent prior to being gasified can be in the form of a plurality of granules that are encapsulated with a resin carrier. (Page 12, lines 11-17). The resin carrier can be essentially the same material as the thermoplastic polyolefin elastomer. (Page 13, lines 21-24). The foamed padding material can further include an additive selected from the group consisting of colorants, inorganic fillers, nucleating agents, and stabilizers.

The present invention also relates to a method of forming a foamed padding material for a steering wheel. The method comprises mixing a thermoplastic polyolefin elastomer and

a chemical foaming agent. (Page 17, lines 4-9). The thermoplastic polyolefin elastomer mixed with the chemical foaming agent is then heated to cause the thermoplastic polyolefin elastomer to melt and the chemical foaming agent to melt. (Page 4; lines 9-11). The heated mixture is injected into a mold that includes a cavity in which a spoke portion and rim portion of a steering wheel armature are received. (Page 17, lines 12-20).

VI. GROUNDS OF REJECTION TO BE REVIEW ON APPEAL

1. Whether claims 1, 3, 5, 8, 11, 19, 20, 21, 22-24, and 27 are obvious over U.S. Patent No. Re. 36,898 (hereinafter, "Sawada et al.") in view of U.S. Patent No. 6,386,579 (hereinafter, "Reidy et al.")?

2. Whether claim 7, 12, 14, 15, 18, and 28 are obvious over Sawada et al. in view of Reidy et al.?

3. Whether claims 9 and 25 are obvious over Sawada et al. in view of Reidy et al. and WO 99/10419 (hereinafter, "Braun et al.")?

4. Whether claims 10 and 26 are obvious over Sawada et al. in view of Reidy et al. and Braun et al.?

5. Whether claim 16 is obvious over Sawada et al. in view of Reidy et al. and Braun et al.?

6. Whether claim 17 is obvious over Sawada et al. in view of Reidy et al. and Braun et al.?

VII. ARGUMENTS FOR CLAIMS 1, 3, 5-12 AND 14-28

A. 35 U.S.C. §103(a) rejection of claims 1, 3, 5, 6, 8 and 11, 19, 20, 21, 22-24, and 27 over Sawada et al. in view of Reidy et al.

Claim 1 recites a steering wheel comprising a rim portion, a spoke portion, and a foamed thermoplastic polyolefin elastomer padding material adhered to the rim portion and the spoke portion. The foamed thermoplastic polyolefin elastomer padding material includes an inner portion and an outer portion substantially covering the rim portion and the spoke portion. The inner portion has a cellular structure and a substantially uniform cell density. The outer portion has a continuous external surface free of interruption by a cell. The foamed thermoplastic polyolefin elastomer padding material comprises a gasified chemical foaming agent and a thermoplastic polyolefin elastomer. The thermoplastic polyolefin elastomer is weatherable and has a durometer shore A hardness of about 30 to about 90.

Claim 1 is patentable over Sawada et al. in view of Reidy et al. because (1) Sawada et al. in view of Reidy et al. do not teach or suggest a foamed thermoplastic polyolefin elastomer padding material that has a durometer shore A hardness of about 30 to about 90 and comprises an inner portion having a cellular structure and a substantially uniform cell density and an outer portion having a continuous external surface free of interruption by a cell, (2) the Office Action provides no motivation to use the thermoplastic polyolefin elastomers in Sawada et al. for the padding material in Reidy et al., and (3) the combined teachings of Sawada et al. and Reidy et al. would still not teach the invention recited in claim 1.

1. Sawada et al. in view of Reidy et al. do not teach or suggest a foamed thermoplastic polyolefin elastomer padding material that has a durometer shore A hardness of about 30 to about 90 and comprises an inner portion having a cellular structure and a substantially uniform cell density and an outer portion having a continuous external surface free of interruption by a cell.

Sawada et al. teach a cover for a vehicle air bag that comprises an injection molded core layer and an injection molded external surface layer. The injected molded external surface layer can be foamed up to 3 times its volume (Column 4, lines 22-24). Sawada et al. do not teach that the external surface layer has a substantially uniform cell density and that it has an outer portion, which is free of interruption by cell. Sawada et al., in fact, say nothing about the structure other than it can be foamed.

Sawada et al. also do not teach that the core layer can comprise a foamed thermoplastic polyolefin elastomer. The core layer, which is referred to as layer 1B, is not foamed as indicated in the Office Action. The only core layer that is foamed is in the comparative examples, and these core layers do not comprise a thermoplastic polyolefin elastomer, but a urethane foam. (Column 8, lines 5-10).

Additionally, as noted in the Office Action, Sawada et al. do not teach substantially covering the rim portion and the spoke portion of a steering wheel. Moreover, there is no suggestion in Sawada et al. to use such a material to cover the rim portion and spoke portion of the steering, or that using such a material to cover a rim portion and spoke portion of a steering wheel is even desirable.

Reidy et al. also do not teach a foamed thermoplastic polyolefin elastomer material that has an inner portion with a substantially uniform cell density and that has an outer portion, which is free of interruption by cell. Reidy et al. teach a padding material comprising a thermoplastic elastomer. Reidy et al. teach that the thermoplastic elastomer can be Arnitel EM 400. As discussed in the background section of the present application and in the Arnitel

reference provided in the IDS, Arnitel EM 400 is not a polyolefin thermoplastic elastomer, but a polyester.

Reidy et al. also teach that thermoplastic elastomers, such as polypropylene can be used for the steering wheel. Reidy et al. however, do not teach that the durometer shore A hardness of a thermoplastic elastomer formed from polypropylene. Additionally, there is no suggestion in Reidy et al. that a thermoplastic elastomer formed from a polypropylene has a durometer Shore A hardness of about 30 to about 90. Moreover, Reidy et al. do not teach that the polypropylene is used in combination with a gasified foaming agent. Additionally, although suggested by Reidy et al., polypropylene is not a thermoplastic elastomer. Polypropylene as defined in Hawley's Condensed Chemical Dictionary (a copy of relevant text attached to response dated June 3, 2003) is a crystalline thermoplastic polymer. It is not a thermoplastic elastomer in and of itself. Polypropylene must be combined with an additional polymer that has amorphous properties to form a thermoplastic elastomer. Therefore, even though Reidy et al. teach that polypropylene is an example of a thermoplastic elastomer, this is not an accurate statement, and thus, Reidy et al. cannot be relied on to teach that a thermoplastic polyolefin elastomer.

Reidy et al. also do not teach a padding material of a thermoplastic polyolefin elastomer with a continuous external surface free of interruption by a cell. Reidy et al., first, only disclose a thermoplastic resin has the structure disclosed in Fig. 4, with an external skin and underlying core. Reidy et al. do not teach that this thermoplastic resin is a thermoplastic polyolefin elastomer. Reidy et al. further do not teach that the padding material has an external surface free of interruption by cell. Referring to Fig. 4 of Reidy et al., which depicts a padding material on a steering wheel, the padding material includes numerous cells across the surface 20 of the padding material. Thus, the external surface of the padding material is not free of interruption by cell.

Thus, Sawada et al. in view of Reidy et al. fail to teach or suggest a thermoplastic polyolefin elastomer with a durometer Shore A hardness of about 30 to about 90 that has an inner portion having a cellular structure and a substantially uniform cell density and an outer portion having a continuous external surface free of interruption by a cell.

2. The Office Action fails to provide a motivation to use the thermoplastic polyolefin elastomers in Sawada et al. for the padding material in Reidy et al.

To establish obviousness based on a combination of the elements disclosed in the prior art, there must be some motivation, suggestion, or teaching of the desirability of making the specific combination that was made by the applicant. *In re* Kotzab, 55 USPQ2d 1313, 1315 (Fed. Cir. 2000). The Office Action provides no motivation, suggestion, or teaching to cover the rim and spoke portion of a steering wheel as taught in Reidy et al. with the thermoplastic polyolefin elastomers taught in Sawada et al.

The Office Action argues that it would be obvious to one of ordinary skill in the art at the time the invention was made to modify the padding of Sawada et al. with the teachings of Reidy et al. so as to provide a cover that is adhered to the spoke and rim portions of the steering wheel to ensure strength and continuity across the steering wheel, while providing good wear characteristics along the rim of the steering wheel.

There is no teaching or suggestion in Sawada et al. and Reidy et al. that a thermoplastic polyolefin elastomer, and particularly, a thermoplastic polyolefin elastomer taught in Sawada et al., when adhered to a spoke or rim potions will "ensure strength and continuity across the steering wheel, while providing good wear characteristics along the rim of the steering wheel," as argued in the Office Action.

Sawada et al. is only concerned with selecting polymers to form a cover that has a "surface that is soft and comfortable to the touch... and that is easily broken in a controlled

manner when the air bag inflates." (Column 1, lines 66-67, column 2, lines 1-10). There is no suggestion in Sawada et al. that a thermoplastic polyolefin elastomer will have good wear characteristics when used along the rim or spoke of a steering wheel or that a polymer, which can be easily broken, can be used to cover a rim and spoke portion of a steering wheel. Likewise, Reidy et al. do not teach or suggest that a thermoplastic polyolefin elastomer, such as a thermoplastic polyolefin elastomer, will have good wear characteristics when used along the rim or spoke of a steering wheel or that a polymer, which can be easily broken, can be used to cover a rim and spoke portion of a steering wheel. In fact, Reidy et al. states that the "prior art does not identify a single thermoplastic material that will yield the necessary physical characteristics of for both the rim portion of a steering wheel and the portion of the steering wheel that will function as an air bag cover." (Column 3, lines 41-45).

Accordingly, the Office Action's motivation to combine the teaching of Reidy et al. and Sawada et al. are at best speculation and conjecture. Speculation and conjecture, however, are not sufficient for establishing a prima facie case of obviousness. In re Warner, 379 F.2d 1011, 1017, 154 USPQ 173, 178 (CCPA 1967).

Thus, nothing in the prior art references of record suggests the desirability of using a foamed thermoplastic polyolefin elastomer to cover a steering wheel spoke and rim portion. Therefore, the motivation for the combination of Sawada et al. and Reidy et al. relied upon in the rejection of claim 1 could only have arisen from hindsight reconstruction, which is impermissible. Heidelberger Druckmaschinen AG *v.* Hantscho Commercial Products, Inc., 30 USPQ2d 1377, 1380 (Fed. Cir. 1993).

The teachings of the prior art must be viewed without benefit of the applicants' disclosure and must in and of themselves make the invention as a whole obvious to one of ordinary skill in the art. *See In re* Sponnoble, 160 USPQ 237, 243 (CCPA 1969). Therefore, the patents relied upon in the rejection of claim 1 do not in and of themselves provide

teachings, which would have made the features of claim 1, as a whole, obvious to one of ordinary skill in the art.

3. The combined teachings of Sawada et al. and Reidy et al. would still not teach the invention recited in claim 1.

Assuming arguendo, that there was a motivation to combine the teachings of Sawada et al. and Reidy et al., the combined teachings of Sawada et al. and Reidy et al. would still not teach the invention recited in claim 1. As discussed above, Sawada et al. do not teach a foamed thermoplastic polyolefin elastomer that has an inner portion having a cellular structure and a substantially uniform cell density and an outer portion having a continuous external surface free of interruption by a cell. Thus, if one was to provide the thermoplastic polyolefin elastomer of Sawada et al. over the rim and spoke portion of the steering wheel as taught in Reidy et al., the thermoplastic polyolefin elastomer would still not include an inner portion having a cellular structure and a substantially uniform cell density and an outer portion having a continuous external surface free of interruption by a cell.

Claims 3, 5, 6, 8 and 11 depend either directly or indirectly from claim 1 and therefore are allowable because of the aforementioned deficiencies in rejection with respect to claim 1 and because of the specific limitations recited in claims 3, 5, 6, 8 and 11.

Claim 19 recites similar limitations as claim 1, and there fore should be allowed because of the aforementioned deficiencies discussed in the rejection with respect to claim 1.

Claims 20, 21, 22-24 and27 depend either directly or indirectly from claim 19 and therefore are allowable because of the aforementioned deficiencies in the rejection with respect to claim 19 and because of the specific limitations recited in claims 20, 21, 22-24 and 27.

B. 35 U.S.C. §103(a) rejection of claims 7, 12, 14, 15, 18, and 28 over Sawada et al. in view of Reidy et al.

Claim 7 depends from claim 1 further recites that the foamed padding material is plasticizer-free. Claim 12 includes limitations similar to claim 1 and also recites that the padding material is plasticizer free. Claim 28 depends from claim 19 and also recites that the padding material is plasticizer-free.

Claims 7, 12, and 28 are patentable over Sawada et al. in view of Reidy et al. because, as discussed with respect to claim 1, (1) Sawada et al. in view of Reidy et al. do not teach or suggest a foamed thermoplastic polyolefin elastomer padding material that has a durometer shore A hardness of about 30 to about 90 and comprises an inner portion having a cellular structure and a substantially uniform cell density and an outer portion having a continuous external surface free of interruption by a cell, (2) the Office Action provides no motivation to use the thermoplastic polyolefin elastomers in Sawada et al. for the padding material in Reidy et al., and (3) the combined teachings of Sawada et al. and Reidy et al. would still not teach the invention recited in claim 1.

Additionally, claim 7 and 12 are patentable over Sawada et al. in view of Reidy et al. because Sawada et al. teach away from a plasticizer-free padding material.

Sawada et al. teach including a plasticizer in the polyolefin elastomer. Sawada et al. state that a hydrocarbon based rubber softener, such as paraffin-based oil or napthene-based oil can be used as a softener to obtain the desired softness of the surface layers. (Column 3, lines 23-26). Sawada et al. further states that the content of the rubber based softener should not exceed 30% by weigh and should preferably be included in an amount of more than 3%. (Column 3, lines 51-63). A rubber softener is a plasticizer. Thus, Sawada et al. teach using a plasticizer in combination with thermoplastic polyolefin elastomer, and therefore teach away from the invention recited in claim 7, 12, and 28.

The Examiner argues that Reidy et al. teach omitting plasticizers as they can migrate to the surface of the padding and cause adhesion problems with paints. This teaching in

Reidy is provided at column 2, lines 5-8 and relates to plasticizers used in PVC. Reidy et al., however, do not teach or suggest plasticizer migration is a problem with thermoplastic polyolefin elastomers or if thermoplastic polyolefin elastomer are used that they should be plasticizer-free.

Thus, Sawada et al. in view of Reidy et al. fail to teach or suggest a plasticizer-free padding. Therefore, claims 7, 12, and 28 are allowable because of the aforementioned deficiencies in the rejection with respect to claim 1 and because Sawada et al. in view or Reidy et al. do not teach or suggest a padding material that is plasticizer-free.

Claims 14, 15, and 18 depend directly from claim 12 and therefore are allowable because of the aforementioned deficiencies in rejection with respect to claim 12 and because of the specific limitations recited in claims 14, 15, and 18.

C. 35 U.S.C. §103(a) rejection of claims 9 and 25 over Sawada et al. in view of Reidy et al. and Braun et al.

Claim 9 depends from claim 1 further recites that the chemical foaming agent prior to be gasified is in the form of a plurality of granules that are encapsulated in a resin carrier. Claim 25 depends indirectly from claim 19, which includes limitations similar to claim 1. Claim 25 also recites that the chemical foaming agent is in the form of a plurality of granules that are encapsulated with a resin carrier.

Claims 9 and 25 are patentable over Sawada et al. in view of Reidy et al. and Braun et al. because, as discussed with respect to claim 1, (1) Sawada et al. in view of Reidy et al. do not teach or suggest a foamed thermoplastic polyolefin elastomer padding material that has a durometer shore A hardness of about 30 to about 90 and comprises an inner portion having a cellular structure and a substantially uniform cell density and an outer portion having a continuous external surface free of interruption by a cell, (2) the Office Action provides no motivation to use the thermoplastic polyolefin elastomers in Sawada et al. for the padding

material in Reidy et al., and (3) the combined teachings of Sawada et al. and Reidy et al. would still not teach the invention recited in claim 1.

Additionally, claims 9 and 25 are patentable over Sawada et al. in view of Reidy et al. and Braun et al. because the Office Action provides no motivation to use the expanded polyolefin particles taught in Braun et al. in the thermoplastic elastomers taught Sawada et al.

The Office Action argues that Braun et al. disclose it is known in the art to provide an impregnated polyolefin granule containing a foaming agent, therefore it would be obvious to one of ordinary skill in the art to provide the foaming agent of the reference combination set forth within a capsule, as taught by Braun et al. in order to avoid "contamination of the surroundings."

There is no suggestion in Braun et al. that an impregnated polyolefin granule will avoid contamination of surroundings. Additionally, Sawada et al. do not teach or suggest that contamination of surroundings is a problem associated with the thermoplastic polyolefin elastomers disclosed in Sawada et al.

Accordingly, the Office Action's motivation to combine the teaching of Braun et al. and Sawada et al. are at best speculation and conjecture. Speculation and conjecture, however, are not sufficient for establishing a prima facie case of obviousness. In re Warner, 379 F.2d 1011, 1017, 154 USPQ 173, 178 (CCPA 1967).

Thus, neither Braun et al. nor Sawada et al. suggests the desirability of using an impregnated polyolefin granule in the thermoplastic elastomer of Sawada et al. Therefore, the motivation for the combine the teachings relied upon in the rejections could only have arisen from hindsight reconstruction, which is impermissible. Heidelberger Druckmaschinen AG *v.* Hantscho Commercial Products, Inc., 30 USPQ2d 1377, 1380 (Fed. Cir. 1993). Therefore, the patents relied upon in the rejection of claims 9 and 25 do not in and of themselves provide teachings, which would have made the features of claims 9 and 25, as a whole, obvious to one of ordinary skill in the art.

D. 35 U.S.C. §103(a) rejection of claims 10 and 26 over Sawada et al. in view of Reidy et al. and Braun et al.

Claims 10 depends from claim 9 further recites that the resin carrier is essentially the same material as the thermoplastic polyolefin elastomer used to form the foamed padding material. Claim 26 depends from claim 25 and also recites that the resin carrier is essentially the same material as the thermoplastic polyolefin elastomer used to form the foamed padding material.

Claims 10 and 26 are patentable over Sawada et al. in view of Reidy et al. and Braun et al. because, as discussed with respect to claim 1, (1) Sawada et al. in view of Reidy et al. do not teach or suggest a foamed thermoplastic polyolefin elastomer padding material that has a durometer shore A hardness of about 30 to about 90 and comprises an inner portion having a cellular structure and a substantially uniform cell density and an outer portion having a continuous external surface free of interruption by a cell, (2) the Office Action provides no motivation to use the thermoplastic polyolefin elastomers in Sawada et al. for the padding material in Reidy et al., and (3) the combined teachings of Sawada et al. and Reidy et al. would still not teach the invention recited in claim 1.

Additionally, as discussed with respect to claims 9 and 25, the Office Action provides no motivation to combine the teaching of Sawada et al. and Braun et al.

Further, claims 10 and 26 are patentable over Sawada et al. in view of Reidy et al. and Braun et al. because Sawada et al. in view of Reidy et al. and Braun et al. fail to teach or suggest that the resin carrier is essentially the same material as the thermoplastic polyolefin elastomer used to form the foamed padding material. There nothing in any of the references that provides a teaching of this limitation, and the Examiner does not address this point in the Office Action. Therefore, the patents relied upon in the rejection of claims 10 and 26 do not

in and of themselves provide teachings, which would have made the features of claims 10 and 26, as a whole, obvious to one of ordinary skill in the art.

E. 35 U.S.C. §103(a) rejection of claim 16 over Sawada et al. in view of Reidy et al. and Braun et al.

Claims 16 depends from claim 15 further recites that the chemical foaming agent prior to be gasified is in the form of a plurality of granules that are encapsulated in a resin carrier.

Claim 16 is patentable over Sawada et al. in view of Reidy et al. and Braun et al. because, as discussed with respect to claim 1, (1) Sawada et al. in view of Reidy et al. do not teach or suggest a foamed thermoplastic polyolefin elastomer padding material that has a durometer shore A hardness of about 30 to about 90 and comprises an inner portion having a cellular structure and a substantially uniform cell density and an outer portion having a continuous external surface free of interruption by a cell, (2) the Office Action provides no motivation to use the thermoplastic polyolefin elastomers in Sawada et al. for the padding material in Reidy et al., and (3) the combined teachings of Sawada et al. and Reidy et al. would still not teach the invention recited in claim 1.

Additionally, claim 16 is patentable over Sawada et al. in view of Reidy et al. and Braun et al. because, as discussed above with respect to claim 12, Sawada et al. teach away from a plasticizer-free padding material.

Further, claim 16 is patentable over Sawada et al. in view of Reidy et al. and Braun et al. because the Office Action provides no motivation to use the expanded polyolefin particles taught in Braun et al. in the thermoplastic elastomers taught Sawada et al.

The Office Action argues that Braun et al. disclose it is known in the art to provide an impregnated polyolefin granule containing a foaming agent, therefore it would be obvious to one of ordinary skill in the art to provide the foaming agent of the reference combination set

forth within a capsule, as taught by Braun et al. in order to avoid "contamination of the surroundings."

There is no suggestion in Braun et al. that an impregnated polyolefin granule will avoid contamination of surroundings. Additionally, Sawada et al. do not teach or suggest that contamination of surroundings is a problem associated with the thermoplastic polyolefin elastomers disclosed in Sawada et al.

Accordingly, the Office Action's motivation to combine the teaching of Braun et al. and Sawada et al. are at best speculation and conjecture. Speculation and conjecture, however, are not sufficient for establishing a prima facie case of obviousness. In re Warner, 379 F.2d 1011, 1017, 154 USPQ 173, 178 (CCPA 1967).

Thus, neither Braun et al. nor Sawada et al. suggests the desirability of using an impregnated polyolefin granule in the thermoplastic elastomer of Sawada et al. Therefore, the motivation for the combine the teachings relied upon in the rejections could only have arisen from hindsight reconstruction, which is impermissible. Heidelberger Druckmaschinen AG *v.* Hantscho Commercial Products, Inc., 30 USPQ2d 1377, 1380 (Fed. Cir. 1993). Therefore, the patents relied upon in the rejection of claim 16 do not in and of themselves provide teachings, which would have made the features of claim 16, as a whole, obvious to one of ordinary skill in the art.

F. 35 U.S.C. §103(a) rejection of claim 17 over Sawada et al. in view of Reidy et al. and Braun et al.

Claims 17 depends from claim 16 further recites that the resin carrier is essentially the same material as the thermoplastic polyolefin elastomer used to form the foamed padding material.

Claim 17 is patentable over Sawada et al. in view of Reidy et al. and Braun et al. because, as discussed with respect to claim 1, (1) Sawada et al. in view of Reidy et al. do not

teach or suggest a foamed thermoplastic polyolefin elastomer padding material that has a durometer shore A hardness of about 30 to about 90 and comprises an inner portion having a cellular structure and a substantially uniform cell density and an outer portion having a continuous external surface free of interruption by a cell, (2) the Office Action provides no motivation to use the thermoplastic polyolefin elastomers in Sawada et al. for the padding material in Reidy et al., and (3) the combined teachings of Sawada et al. and Reidy et al. would still not teach the invention recited in claim 1.

Additionally, as discussed with respect to claims 16, the Office Action provides no motivation to use the expanded polyolefin particles taught in Braun et al. in the thermoplastic elastomers taught Sawada et al.

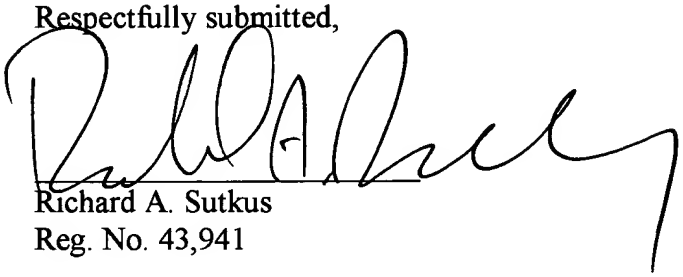
Further, claim 17 is patentable over Sawada et al. in view of Reidy et al. and Braun et al. because Sawada et al. in view of Reidy et al. and Braun et al. fail to teach or suggest that the resin carrier is essentially the same material as the thermoplastic polyolefin elastomer used to form the foamed padding material. There nothing in any of the references that provides a teaching of this limitation and the Examiner does not address this point in the Office Action. Therefore, the patents relied upon in the rejection of claim 17 do not in and of themselves provide teachings, which would have made the features of claim 17, as a whole, obvious to one of ordinary skill in the art.

VIII. APPENDIX

The attached Appendix contains a copy of the claims on appeal.

Please charge any deficiency or credit any overpayment in the fees for this Appeal Brief to Deposit Account No. 20-0090.

Respectfully submitted,



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Appendix

Claim 1. A steering wheel comprising a rim portion, a spoke portion, and a foamed thermoplastic polyolefin elastomer padding material adhered the rim portion and the spoke portion, the foamed thermoplastic polyolefin elastomer padding material including an inner portion and an outer portion substantially covering the rim portion and the spoke portion, the inner portion having a cellular structure and a substantially uniform cell density, the outer portion having a continuous external surface free of interruption by a cell, and the foamed thermoplastic polyolefin elastomer padding material comprising a gasified chemical foaming agent and a thermoplastic polyolefin elastomer wherein the thermoplastic polyolefin elastomer is weatherable and has a durometer shore A hardness of about 30 to about 90.

Claim 3. The steering wheel of claim 1, wherein the thermoplastic polyolefin elastomer includes a thermoplastic polyolefin polymer selected from the group consisting of polyethylene, polypropylene, polybutylene, polyisobutylene, polyoctene, copolymers of polyethylene, polypropylene, and polybutylene, and mixtures thereof.

Claim 5. The steering wheel of claim 3, wherein the thermoplastic polyolefin elastomer further includes another thermoplastic elastomer or rubber.

Claim 6. The steering wheel of claim 1, wherein the thermoplastic polyolefin elastomer comprises a mixture of ethylene-propylene copolymer, ethylene-propylene-diene terpolymer, and polypropylene.

Claim 7. The steering wheel of claim 1 wherein the foamed padding material is plasticizer-free.

Claim 8. The steering wheel of claim 1, said chemical foaming agent comprises an exothermic chemical foaming agent, an endothermic chemical foaming agent, or a mixture thereof.

Claim 9. The steering wheel of claim 1, wherein the chemical foaming agent prior to being gasified is in the form of a plurality of granules that are encapsulated with a resin carrier.

Claim 10. The steering wheel of claim 9, wherein the resin carrier is essentially the same material as the thermoplastic polyolefin elastomer.

Claim 11. The steering wheel of claim 1 wherein the foamed padding material further includes an additive selected from the group consisting of colorants, inorganic fillers, nucleating agents, and stabilizers.

Claim 12. A steering wheel comprising a rim portion, a spoke portion, and a plasticizer-free foamed thermoplastic polyolefin elastomer padding material substantially covering said rim portion and said spoke portion, said foamed thermoplastic polyolefin elastomer padding material substantially covering said rim portion having a first thickness and said foamed thermoplastic polyolefin elastomer padding material substantially covering said spoke portion having a second thickness different from said first thickness, said foamed thermoplastic polyolefin elastomer padding material including an inner portion and an outer portion, said inner portion having a cellular structure and a substantially uniform cell density,

said outer portion having a continuous external surface free of interruption by a cell, and said foamed thermoplastic polyolefin elastomer padding material comprising a gasified chemical foaming agent and a thermoplastic polyolefin elastomer wherein the thermoplastic polyolefin elastomer is weatherable and has a durometer shore A hardness of about 30 to about 90.

Claim 14. The steering wheel of claim 12, wherein the thermoplastic polyolefin elastomer comprises a mixture of ethylene-propylene copolymer, ethylene-propylene-diene terpolymer, and polypropylene.

Claim 15. The steering wheel of claim 12, wherein said chemical foaming agent comprises an exothermic chemical foaming agent, an endothermic chemical foaming agent, or a mixture thereof.

Claim 16. The steering wheel of claim 15, wherein the chemical foaming agent prior to being gasified is in the form of a plurality of granules that are encapsulated with a resin carrier.

Claim 17. The steering wheel of claim 16, wherein the resin carrier is essentially the same material as the thermoplastic polyolefin elastomer.

Claim 18. The steering wheel of claim 12 wherein the foamed padding material further includes an additive selected from the group consisting of colorants, inorganic fillers, nucleating agents, and stabilizers.

Claim 19. A method of manufacturing a foamed padding material for a steering wheel, said method comprising the steps of:

mixing a thermoplastic polyolefin elastomer and a chemical foaming agent, wherein the thermoplastic polyolefin elastomer is weatherable and has a durometer shore A hardness of about 30 to about 90;

foaming said thermoplastic polyolefin elastomer with said chemical foaming agent;

providing a steering wheel armature having a rim portion and a spoke portion; and

substantially covering said rim portion and said spoke portion of said steering wheel armature with said foamed thermoplastic polyolefin elastomer, said foamed thermoplastic polyolefin elastomer being adhered to said rim portion and spoke portion of said steering wheel armature and forming a foamed padding material including a first portion and a second portion, said first portion having cellular structure and a substantially uniform cell density, said second portion having an external surface free of interruption by a cell.

Claim 20. The method of claim 19 wherein said foamed thermoplastic polyolefin elastomer substantially covering said rim portion and said spoke portion of said steering wheel armature by molding said foamed thermoplastic polyolefin elastomer to said rim portion and said spoke portion of said steering wheel armature.

Claim 21. The method of claim 19 wherein said thermoplastic polyolefin elastomer is foamed by heating said mixture of thermoplastic polyolefin elastomer and chemical foaming agent to a temperature above the melting temperature of said thermoplastic polyolefin elastomer.

Claim 22. The method of claim 19, wherein said thermoplastic polyolefin elastomer is weatherable and has a durometer shore A hardness of about 30 to about 90.

Claim 23. The method of claim 19, wherein the thermoplastic polyolefin elastomer comprises a mixture of ethylene-propylene copolymer, ethylene-propylene-diene terpolymer, and polypropylene.

Claim 24. The method of claim 19, wherein said chemical foaming agent comprises an exothermic chemical foaming agent, an endothermic chemical foaming agent, or a mixture thereof.

Claim 25. The method of claim 24 wherein said chemical foaming agent is in the form of a plurality of granules that are encapsulated with a resin carrier.

Claim 26. The method of claim 25, wherein the resin carrier is essentially the same material as the thermoplastic polyolefin elastomer.

Claim 27. The method of claim 20, wherein said foamed thermoplastic polyolefin elastomer is molded to said steering wheel by injection molding.

Claim 28. The method of claim 19, wherein said foamed padding material is plasticizer-free.